

MIYAZAKI, M.  
Appl. No. 10/678,309  
November 2, 2006

**REMARKS/ARGUMENTS**

Reconsideration of this application is respectfully requested.

Applicant's certified priority document was filed on October 6, 2003. A copy of the USPTO postcard receipt acknowledging such is attached. The priority information was not indicated on the Office Action Summary. Completion of this data and confirmation of receipt of applicant's certified priority document is respectfully requested.

In response to the rejection of claims 3-7 and 11-14 under 35 U.S.C. §112, second paragraph, these claims have been amended to avoid the Examiner's stated objections.

Accordingly, all outstanding formal issues are now believed to have been resolved in the applicant's favor.

The rejection of claims 1-14 under 35 U.S.C. §102 as allegedly anticipated by Licato '062 is respectfully traversed – as is the rejection of claims 15-19 under 35 U.S.C. §103 as allegedly being made "obvious" based on Licato in view of Miyazaki '376.

Licato appears to have been cited merely for its teaching of a conventional MRI system. The teaching is directed towards a technique for nesting gradient pulses to allow increased gradient slew rates and reduced peripheral nerve stimulation. It does not appear to be necessarily directed to magnetic resonance angiography (MRA). In particular, the Examiner's reference to column 1, line 56 as a teaching that "These pulses may be used for velocity or flow compensation" is included only in the background

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description of prior art techniques where, in “many circumstances, the only factor of importance in the generation of a gradient field pulse is the integral of gradient amplitude over the duration of the gradient pulse”.

Furthermore, the Examiner’s reliance on column 6, lines 43-59 is hard to understand because that merely indicates that one of the gradients is used for phase encoding (and the associated re-winding or resetting back to a reference value in readiness for the next step of phase encoding).

In short, the Licato teaching does not appear to show use of the phase encoding magnetic gradient field coils to also generate flow pulses for dephasing or rephasing MR spin of a blood flow within the subject in the same direction as the phase encoding gradient magnetic field. See, for example, applicant’s showing of such pulses from the phase encoding gradient field coil in Figures 6, 7, etc.

As explained throughout applicant’s specification, applicant has provided a non-contrast magnetic resonance angiography apparatus/method which improves the application of flow pulses in the context of non-contrast MRA. Licato is totally silent about non-contrast MRA (indeed, the undersigned does not find it to be explicit at all with respect to MRA of any kind) and does not even mention the problems the present invention is intended to solve. The claims have been amended above in an effort to make such distinctions over the cited art even more readily apparent.

Miyazaki was cited apparently merely for its use of a prep scan. While Miyazaki does in fact relate to non-contrast MRA, it exhibits the prior art problems discussed in the

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specification and addressed by the present invention. It is also does not supply any of the fundamental deficiencies of Licato. Indeed, Miyazaki provides flow pulses in the frequency encoding direction – in stark contrast to the claim requirements of the present application which require flow pulses in the phase encoding direction.

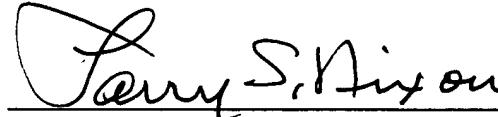
Furthermore, there is no apparent suggestion in either of these references for selectively supplying features of one to the other.

The Examiner's attention is also drawn to new claim 20. It will be noted that, inter alia, claim 20 also requires a flow pulse in a phase encoding direction.

Accordingly, this entire application is now believed to be in allowable condition and a formal Notice to that effect is respectfully solicited.

Respectfully submitted,

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